

CALL FOR GRANT APPLICATIONS

(AE2026-0217)

INESC TEC is now accepting grant applications to award 1 Research Grant (BI) within the scope of the on the scope of the project ATLAS, with reference EAPA_0109/2024, co-funded by the European Union by Interreg Atlantic Area Programme 2021-2027.

1. GRANT DESCRIPTION

Type of grant: Research Grant (BI)

General scientific area: ENGINEERING

Scientific subarea: Computer engineering

Area of Work: Underwater robotics

Grant duration: 12 months, starting on 2026-09-01, with the possibility of being renewed until the end of the project.

Scientific advisor: André Filipe Pinto

Workplace: INESC TEC, Porto, Portugal

Maintenance stipend: € 1090.98, [according to the table of monthly maintenance stipend for FCT grants](#), paid via bank transfer. Grant holders may be awarded potential supplements, according to a quarterly evaluation process (Articles 19, 21 and 22 of the [Regulations for Grants of INESC TEC](#) and Annex II), up to a maximum limit of 50% of the monthly maintenance stipend.

INESC TEC supports costs with registration, enrolment or tuition fees, during the grant duration, under the terms established in the internal document: [Payment of Tuition fees to grant holders](#).

The grant holder will benefit from health insurance, supported by INESC TEC.

2. OBJECTIVES:

The aim is to support research and development activities in the field of underwater robotics, specifically applied to the distributed acoustic monitoring of the marine environment. The project seeks to explore the use of subsea cables capable of being integrated with Distributed Acoustic Sensing (DAS) technology. These cables function as continuous observation systems, generating data relevant to characterizing noise produced by maritime traffic and identifying species present in the ecosystem. In this context, particular emphasis will be placed on the collection, compression, and fusion of acoustic data acquired via DAS systems with data from sources such as AIS (Automatic Identification System).

The grant holder will collaborate with the Center for Robotics and Autonomous Systems team on the development, integration, and validation of the solutions being created. Activities will include the selection and integration of sensors and data acquisition systems, the implementation of algorithms for data compression and analysis, and the execution of tests in both laboratory and marine environments. The work will also involve the integration of external sensors, such as AIS stations.

3. BRIEF PRESENTATION OF THE WORK PROGRAMME AND TRAINING:

Study of the operating principles of DAS systems, the characteristics of the data produced, and the key requirements for acquisition, storage, transmission, and processing;



Characterization of data generated by DAS, including analysis of data volume, sampling rates, bandwidth, resolution, spatial and temporal variability, and spectral content;

Identification of compression requirements and definition of metrics to evaluate reconstructed data quality, compression ratio, and computational cost;

Study and implementation of lossy and lossless compression techniques, including methods based on predictive coding, filter banks, transforms, and statistical or entropy coding;

Development of compression methods tailored to the spatial, temporal, and spectral characteristics of DAS data;

Development of algorithms for feature extraction and analysis of acoustic events of interest;

Production of technical and scientific documentation, including scientific papers and materials to support the dissemination of results;

Collaboration with the Robotics and Autonomous Systems Center team and project partners on technical and scientific activities;

Preparation of the fellowship activity report.

4. REQUIRED PROFILE:

Admission requirements:

Bachelor's degree in a field relevant to the activities to be performed, specifically: Electrical and Computer Engineering, Computer Engineering, Engineering Physics, Telecommunications Engineering, or related fields. The awarding of the fellowship is dependent on the applicants' enrolment in study cycle or non-award courses of Higher Education Institutions.

Preference factors:

Experience with parallel programming and/or high-performance computing, particularly on GPU or FPGA architectures;

Knowledge of compression techniques, including predictive coding, filter banks, transforms, and statistical or entropy coding;

Knowledge of code optimization, parallel programming, and performance analysis, including computational complexity, throughput, latency, and memory management;

Ability to work independently within a multidisciplinary team;

Experience communicating results orally and in writing to an audience;

Proficiency in spoken and written English, sufficient for reading technical documentation and producing reports and scientific papers.

Minimum requirements:

Knowledge of digital signal processing, data analysis, and signal or data compression methods;

Knowledge of mathematical and statistical signal analysis, including time-domain, spectral, and statistical analysis;

Programming experience in C/C++ and Python;

Knowledge of development in an embedded Linux environment;

Experience producing scientific papers or project documentation.

5. EVALUATION OF APPLICATIONS AND SELECTION PROCESS:



Selection criteria and corresponding valuation: the first phase comprises the Academic Evaluation (AC), based on the criteria referred to in Article 12 of the [Regulations for Grants of INESC TEC](#), while the second phase comprehends the Individual Interview (EI). All factors are evaluated on a scale of 0 to 100, taking into account the applicants' merit, suitability and conformity with the preference factors.

The weight of the AC factors are as follows: Academic Qualifications (FA, 50%), Scientific Publications (PC, 20%), Experience (EX, 25%) and Motivation Letter (CM, 5%).

Candidates who score less than 50 points in the AC average will be considered excluded on absolute merit. The top five candidates approved on absolute merit will be qualified for the individual interview. The Final Grade (CF) is obtained by the weighted average of AC (80%) and EI (20%).

DISABILITY INCENTIVE

Candidates who present a degree of disability equal to or greater than 90% will benefit from an incentive (20) in the score of the CV Assessment.

Candidates who present a degree of disability equal to or greater than 60% and less than 90% will also benefit from an incentive (10) in the score of the CV Assessment.

Said score may, in these cases, exceed 100 points.

Candidates must demonstrate the degree of disability during the application, namely through the submission of the Multi-Purpose Medical Certificate of Disability, issued in accordance with Decree-Law no. 202/96, of October 23 currently in effect.

Candidates must declare, in the application form, the type of disability used throughout the selection process, in order to proceed with the required adaptations.

The Selection Jury is composed of the following members:

President of the Jury: Nuno Cruz

Full member: Bruno Miguel Ferreira

Full member: Nuno Miguel Abreu

Substitute member: Marcos Martins

Release of results and prior hearing: the results of the selection process, as well as the terms and procedures for prior hearing, will be released to the applicants by email, under the terms referred to in Article 13 of the Regulations for Studentships and Fellowships of INESC TEC.

6. FORMALISATION OF APPLICATIONS:

Application Documents:

1. Motivation letter;
2. Curriculum Vitae (must include the list of previous fellowships, their type, beginning and end dates, funding entities and host institutions);
3. Certificate or diploma degree;
4. Proof of enrollment in a degree awarding study cycle or in a non degree awarding Higher Education program.
 - The proof of enrollment may be presented just during the grant hiring stage.
5. Signed declaration stating the infringement of the grant holder's duties (article 14, no. 4)
6. Documental evidence to support the country of residence, residence permit or other legally equivalent document, in cases where the applicant is a foreigner or non-resident in Portugal - valid until the beginning of the grant.
7. Other supporting documents relevant to the final assessment.

Failure to deliver the required documents within the 90-day period after the date of the notice of the conditional awarding of the grant implies its cancellation.

Application period: From 2026-07-23 to 2026-08-05

Submission of applications: the application will be formalised by submitting the form available in the *Work With Us* section of INESC TEC website.

7. BINDING LEGISLATION AND REGULATION

The hiring process shall comply with the current legislation regarding the Research Grant Holder Statute, approved by Law no. 40/2004 of August 18, in its current wording, as well as by the [Regulations for Grants of INESC TEC](#) and for [FCT Grants Regulation in force](#).

For more information, please check the [Regulations for Grants of INESC TEC](#) and relevant annexes at www.inesctec.pt/bolsas

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